

# INTERNATIONAL SEARCH REPORT

Internal Application No

PCT/EP2004/009379

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01T1/202

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|----------|--|-----------------------|
| A        | WO 94/02946 A (UNIV JEFFERSON)<br>3 February 1994 (1994-02-03)<br>page 3, line 17 - page 7, line 2<br>page 8, line 29 - page 10, line 34<br>page 12, line 12 - page 16, line 6<br>-----<br>BOON S N ET AL: "FAST 2D PHANTOM<br>DOSIMETRY FOR SCANNING PROTON BEAMS"<br>MEDICAL PHYSICS, AMERICAN INSTITUTE OF<br>PHYSICS. NEW YORK, US,<br>vol. 25, no. 4, 1 April 1998 (1998-04-01),<br>pages 464-475, XP000782525<br>ISSN: 0094-2405<br>the whole document<br>-----<br>-/- | 1-8,<br>19-21         |
| A        |  | 1-8,<br>19-21         |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"V" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 November 2004

Date of mailing of the international search report

24.01.2005

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|----------|---|-----------------------|
| A        | US 5 672 465 A (PATEL GORDHANBhai N ET AL) 30 September 1997 (1997-09-30)<br>column 5, line 28 - column 10, line 30<br>column 18, line 41 - column 20, line 32<br>-----   | 1-8,<br>19-21         |
| A        | HOSS P. ET AL.: "Time-integrated phosphor behaviour in gated image intensifier tubes"<br>IMAGE INTENSIFIERS AND APPLICATIONS II,<br>vol. 4128, 3 August 2000 (2000-08-03), - 4<br>August 2000 (2000-08-04) pages 23-28,<br>XP002278354<br>San Diego, CA, USA<br>the whole document<br>----- | 1-8,<br>19-21         |

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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8, 19-21

An inorganic scintillating mixture and its use comprising at least a first and a second component each having a characteristic behaviour in response to the irradiation with charged particles, such as protons and heavy ions, showing a typical Bragg peak with respect to a relative depth dose, the first component having a quenching characteristic in the Bragg peak region, the second component showing an increased efficiency in the Bragg peak region both related to a reference curve for the relative dose and a third component with binder characteristics in order to hold the other components in a desired mechanical shape.

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2. claims: 9-18

Sensor assembly for charged particle dosimetry, such as proton or heavy ion dosimetry, comprising: a three-dimensional array of sensor heads, each sensor head being located on one end of an optical fibre, the opposite end of the optical fibre being associated with an optical light intensity measuring assembly, each sensor head and at least partially its optical fibre being inserted into a respective cavity located in a holder member.

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Inter Application No  
PCT/EP2004/009379

| Patent document cited in search report | Publication date |            | Patent family member(s) |                         | Publication date         |
|--|------------------|------------|-------------------------|-------------------------|--------------------------|
| WO 9402946                             | A                | 03-02-1994 | WO<br>US                | 9402946 A1<br>5514874 A | 03-02-1994<br>07-05-1996 |
| US 5672465                             | A                | 30-09-1997 | US<br>WO                | 5420000 A<br>9621885 A1 | 30-05-1995<br>18-07-1996 |